

## PATENT COOPERATION TREATY

PCT

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

REC'D 18 FEB 2005

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Rec'd PCT/PTO 11 MAY 2005  
10/534508

Applicant's or agent's file reference P005183-PCT	<b>FOR FURTHER ACTION</b> See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/BR 03/00165	International filing date (day/month/year) 13.11.2003	Priority date (day/month/year) 13.11.2002
International Patent Classification (IPC) or both national classification and IPC G09F3/03		
Applicant ELC PRODUTOS DE SEGURANCA INDUSTRIA E COMERCIO ...		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
  
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
  - This report is also accompanied by ANNEXES, i.e. sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 1 sheets.
  
3. This report contains indications relating to the following items:
  - I  Basis of the opinion
  - II  Priority
  - III  Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
  - IV  Lack of unity of invention
  - V  Reasoned statement under Rule 66.2(a)(ii) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
  - VI  Certain documents cited
  - VII  Certain defects in the international application
  - VIII  Certain observations on the international application

Date of submission of the demand  18.05.2004	Date of completion of this report  21.02.2005
Name and mailing address of the International preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer  Pantoja Conde, A Telephone No. +31 70 340-3907



**INTERNATIONAL PRELIMINARY  
EXAMINATION REPORT**

International application No. PCT/BR 03/00165

**I. Basis of the report**

1. With regard to the **elements** of the international application (*Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rules 70.16 and 70.17)*):

**Description, Pages**

1-5 as originally filed

**Claims, Numbers**

2-6 as originally filed  
1 received on 06.12.2004 with letter of 06.12.2004

**Drawings, Sheets**

1/5-5/5 as originally filed

2. With regard to the **language**, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item.

These elements were available or furnished to this Authority in the following language: , which is:

- the language of a translation furnished for the purposes of the international search (under Rule 23.1(b)).
- the language of publication of the international application (under Rule 48.3(b)).
- the language of a translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

3. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- contained in the international application in written form.
- filed together with the international application in computer readable form.
- furnished subsequently to this Authority in written form.
- furnished subsequently to this Authority in computer readable form.
- The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

4. The amendments have resulted in the cancellation of:

- the description, pages:
- the claims, Nos.:
- the drawings, sheets:

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5.  This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed (Rule 70.2(c)).

*(Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.)*

6. Additional observations, if necessary:

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

**1. Statement**

Novelty (N)	Yes: Claims	1-6
	No: Claims	
Inventive step (IS)	Yes: Claims	1-6
	No: Claims	
Industrial applicability (IA)	Yes: Claims	1-6
	No: Claims	

**2. Citations and explanations**

**see separate sheet**

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**Re Item V**

**Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**

1. Reference is made to the following document:

D3: US-A-5524945 (GEORGOPOULOS ET AL) 11 June 1996 (1996-06-11)

This document has been cited by the applicant in the description.

2. The document D3 is regarded as being the closest prior art to the subject-matter of claim 1, and shows (the references in parentheses applying to this document):

Tie-type security seal (10) comprising a body of thermoplastic material (12) with a locking cavity in the form of a passage (30,58) through the body, a metallic insert element (100) fixed in said cavity and formed with at least one through-opening aligned with said passage (column 5, lines 11 - 54; fig. 9 - 25) and also a locking tooth (110, 112, 114), and an elongated strip of thermoplastic material (18) integral at one end with the body (column 3, lines 16 - 29; fig. 1) and having another free end for insertion through said passage in a first direction where it is locked by said tooth (110, 112, 114) to prevent removal from the cavity in the opposite direction (column 5, line 11 - column 6, line 13), the body and the strip having been manufactured by a plastic injection operation.

The subject-matter of claim 1 differs from this known security seal in that the metallic insert element is totally incorporated to said body of thermoplastic material at the time of the injection moulding operation.

The subject-matter of **claim 1** is therefore new (Article 33(2) PCT).

The problem to be solved by the present invention may be regarded as developing an easier to manufacture, and more secure tie type security seal.

The solution to this problem proposed in claim 1 of the present application is considered as involving an inventive step (Article 33(3) PCT) for the following reasons: With the security seal of the present invention, incorporating the metallic insert with the trough opening into the body of thermoplastic material of the seal during a single injection moulding operation, the manufacturing procedure is simplified and at the same

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time the seal offers a higher degree of security due to the fact that the insert is fixed to the cavity by the thermoplastic moulded around it. Documents D3 (column 5, lines 35 - 54; fig. 12) and D2 disclose a seal with a lateral opening whereby the metallic insert with the thorough opening can be inserted after which a flap is closed over the opening and welded in place on a further manufacture step. Document D1 discloses a cable tie with two separate metal plates embedded in the plastic of the head but projecting outwardly from the head. Moreover the very object of D1 invention (see D1 column 1, lines 28 - 37) is obtained by providing instead of the metal plate insert, two metal plates inserted opposite one another (see D1 column 1, lines 28 - 37). Therefore, there is no hint in the available prior art that would prompt the person skilled in the art to modify the seal of document D3 such that it comprises the distinguishing feature, as it is not considered obvious in itself.

3. Claims 2-6 are dependent on claim 1 and as such also meets the requirements of the PCT with respect to novelty and inventive step.

**CLAIMS**

1. Tie-type security seal comprising a body of thermoplastic material (2) with a locking cavity in the form of a passage (7) through the body, a metallic insert element (11) fixed in said cavity and formed with at least one through-opening (15) aligned with said passage (7) and also a locking tooth (14), and an elongated strip of thermoplastic material (4) integral at one end with the body (2) and having another free end for insertion through said passage in a first direction where it is locked by said tooth (14) to prevent removal from the cavity in the opposite direction, the body and the strip having been manufactured by a plastic injection operation, characterized by the fact that the metallic insert element (11) has been incorporated into said body of thermoplastic material (2) during the injection operation.
2. Security seal according to claim 1, characterized in that the passage (7) that defines the cavity in the body (2) of the seal has a cross section substantially identical to that of the strip (4), at least in the greater part (8) of the length of the latter.
3. Security seal according to claim 2, characterized in that the free end portion (9) of the strip (4) has a smaller cross section than the remaining part of the strip to facilitate the initial introduction through said passage (7).
4. Security seal according to claim 1, 2 or 3, characterized in that the metallic insert element is a substantially flat part (11) stamped with a main region (13) cut out in its centre to define a plurality of teeth (14) bent outwardly from the plane of the part, defining an opening (15) between the ends of the teeth for passage of the strip (4), and, on each side and in the same plane as the central region (13), a lateral extension (12) of which the end coincides with the side of said body.
5. Security seal according to claim 4, characterized in that said end of each lateral extension (12) of the metallic insert element has the form of a two-pronged fork.
6. Security seal according to claim 4 or 5, characterized in that the end of each of said side extensions (12) is integral with a corresponding end of a side extension (12) of a metallic insert element (11) of another similar

**REPLACED BY  
ART 34 AMDT 10/534508  
CLAIMS**

1. Tie-type security seal comprising a body of thermoplastic material (2) with a locking cavity in the form of a passage (7) through the body, a metallic insert element (11) fixed in said cavity and presenting at least one opening (15) aligned with said passage (7) and also a locking tooth (14), and an elongated strip of thermoplastic material (4) integral at one end with the body (2) and having another free end for insertion through said passage in a first direction where it is locked by said tooth (14) to prevent removal from the cavity in the opposite direction, the body and the strip having been manufactured by a plastic injection operation, characterized by the fact that the metallic insert element (11) has been incorporated into said body of thermoplastic material (2) during the injection operation.
2. Security seal according to claim 1, characterized in that the passage (7) that defines the cavity in the body (2) of the seal has a cross section substantially identical to that of the strip (4), at least in the greater part (8) of the length of the latter.
3. Security seal according to claim 2, characterized in that the free end portion (9) of the strip (4) has a smaller cross section than the remaining part of the strip to facilitate the initial introduction through said passage (7).
4. Security seal according to claim 1, 2 or 3, characterized in that the metallic insert element is a substantially flat part (11) stamped with a main region (13) cut out in its centre to define a plurality of teeth (14) bent outwardly from the plane of the part, defining an opening (15) between the ends of the teeth for passage of the strip (4), and, on each side and in the same plane as the central region (13), a lateral extension (12) of which the end coincides with the side of said body.
5. Security seal according to claim 4, characterized in that said end of each lateral extension (12) of the metallic insert element has the form of a two-pronged fork.
6. Security seal according to claim 4 or 5, characterized in that the end of each of said side extensions (12) is integral with a corresponding end of a side extension (12) of a metallic insert element (11) of another similar

**REPLACED BY  
ART 34 AMDT**

seal, and the seal (1) comprises one element in a "comb" of similar seals manufactured in the same injection operation, the individual seals being separable by breaking the junctions between the ends of the lateral extensions (12) of the metallic insert elements (11).